

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Comment re Draft Amendment filed 12/26/2007

2. It is noted that a draft amendment with the heading “DRAFT. NOT FOR ENTRY” was submitted on and entered into the file on December 26, 2007. However, a non-draft amendment and response was then submitted on December 28, 2007. This Office action is in response to the non-draft amendment and response of December 28, 2007.

Election/Restrictions

3. In the instant case, it is noted that an election of the invention of the original “device” claims 1-12 became fixed when those claims received an action on their merits by the Office, i.e., in the Office action mailed September 28, 2007 (see at least MPEP section 818.01).

4. Newly submitted claims 23-28 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The inventions of Groups I (“device” claims 13-22) and II (“method” claims 23-28) do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

in accordance with the guidance set forth in MPEP section 1850 and in Chapter 10 of the International Search and Preliminary Examination Guidelines from the World Intellectual Property Organization (WIPO), it has been determined *a posteriori*, i.e., after taking the prior art into consideration, that the features common to all the claims (i.e., the “frame”, the “first bearing supported by the frame”, the “first bearing having an axis of rotation”, the “first support surface

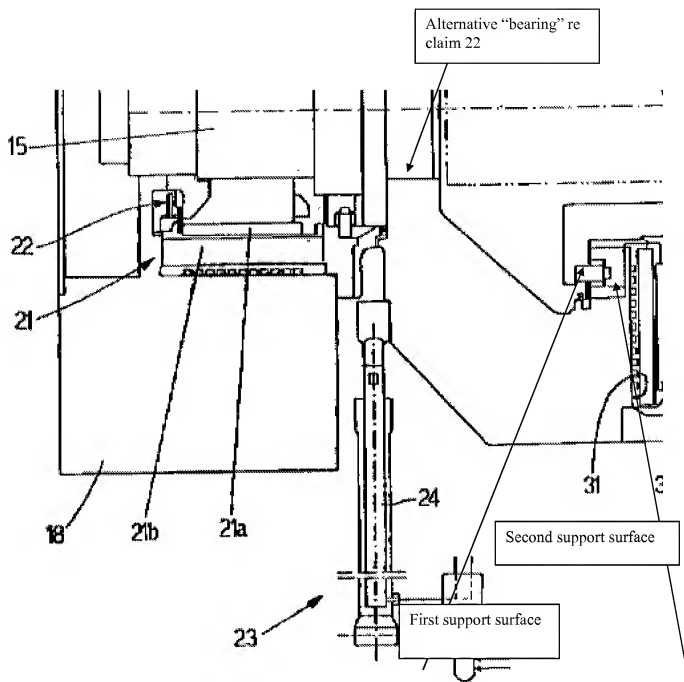
extending from the first bearing in a direction of the axis of rotation, the first support surface being symmetrically arranged with respect to the axis of rotation", the "second bearing supported by the frame", the "second support surface extending from the second bearing in a direction toward the first support surface, the second support surface being asymmetrically arranged with respect to the axis of rotation", the "receiving plate for a workpiece", the receiving plate being attachable or attached to the first support surface such that the receiving plate is between the first support surface and the axis of rotation, and between the second support surface and the axis of rotation) do not constitute "special technical features" since they do not make a "contribution" over the prior art in light of at least U.S. Patent Application Publication No. 2003/0053875 to Pasquetto, for example.

Specifically note that Pasquetto teaches a "machining device" (see Figures 1-4 and title, for example) including a workpiece holding device (see Figure 4) provided with a rotation axis A (see Figure 4, for example). The workpiece holding device includes a "frame" including frame portion 2 (see at least Figure 3) and supporting columns 18, which supporting columns 18 each support a "bearing" 16 and/or seat 17, for example (noting that no specific kind or type or structure of the "bearing" is claimed) (see at least Figure 5 and paragraph 0029, for example), which bearings "have" an axis of rotation A located therewithin, for example.

Pasquetto's device includes first and second "support surfaces" (examples of which are shown in the labeled reproduction of an enlarged portion of Figure 5 below) that "extend from" (as broadly claimed, at the very least, they ultimately "extend from" the bearings 16 by virtue of their connection to member 3 which is in direct contact with bearings 16, and they ultimately "extend from" the bearings 17 by virtue of their connection to member 3 which is connected to

members 21a, 21b, etc., and ultimately to “bearings” 17, see Figure 5; it is noted that this is but one interpretation of many possible interpretations of the reference based on the broad limitation “extend from”) first 16 and/or 17 and second 16 and/or 17 bearings on each of the columns 18.

Note that the first and second support surfaces both extend in the direction of axis A, are “asymmetrically arranged” with respect to axis A, and that the “second support surface” (of the other support column 18 not shown in Figure 5, see Figure 4, for example; like the “second support surface labeled below” “extends from” the not-shown bearings 16/17 of the (other) column 18 (that isn’t shown in Figure 5) (see Figure 5 and Figure 4) horizontally towards the labeled “first support surface” (of the end shown below).



Additionally, “receiving plate” 4 is considered to be attachable or attached to the first and second support surfaces (re the second support surface, note that when the receiving plate 4 is in the location shown in Figure 5, it is ultimately attached to both of the labeled support surfaces).

(Additionally, restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification, noting that the device claims are classified in 409/168, and the method claims are classified in 29/428;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph).

Since applicant has received an action on the merits for the originally presented invention (the “device” of Group I), this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 23-28 are withdrawn from consideration as being directed to a non-elected invention.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter/terminology. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claim 22 sets forth a hydraulic “vessel”. The specification as originally filed does not provide antecedent basis for this term.

Claim Rejections - 35 USC § 112

6. Claims 18 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 18, line 2, “the first bearings” lacks sufficient antecedent basis in the claim (note that only a single “first bearing” was previously set forth in the claims.

In claim 21, “the direct drive motor” lacks sufficient antecedent basis.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 13-15 and 17-22, any of which were rejected under 35 USC 112 above are as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by either of U.S. Patent

Application Publication No. 2003/0053875 to Pasquetto or EP 1285721 to Pasquetto.

It is noted that both of these references are currently available as prior art under 35 USC 102(b) as they were both published more than one year prior to the effective filing date (October 21, 2004) of the present application (noting that no certified translation of the French priority document has been made of record).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Further note that even if such a certified translation is made of record, it alone will not overcome the Pasquetto references, noting that U.S. 2003/0053875 will still be applicable under 35 USC 102(e) based on its filing date of August 20, 2002, and that EP 1285721 will still be applicable under 35 USC 102(a) based on its publication date of February 26, 2003.

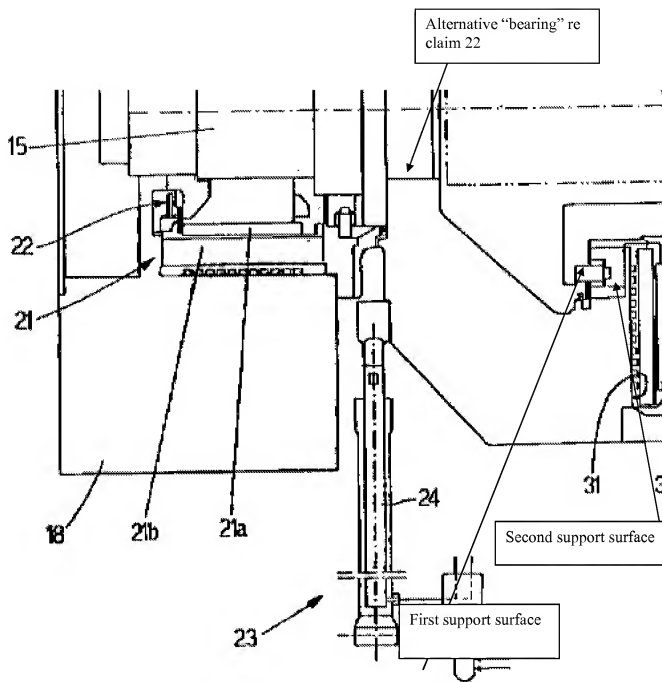
Both of the above-listed Pasquetto references are in the same patent family. Thus, with respect to the following description of what Pasquetto teaches, only the U.S. published application will be referred to with paragraph numbers, etc. However, it is noted that such description equally applies to the EP '721 Pasquetto references due to the references being in the same patent family.

Pasquetto teaches a “machining device” (see Figures 1-4 and title, for example) including a workpiece holding device (see Figure 4) provided with a rotation axis A (see Figure 4, for example). The workpiece holding device includes a “frame” including frame portion 2 (see at least Figure 3) and supporting columns 18, which supporting columns 18 each support a “bearing” 16 and/or seat 17, for example (noting that no specific kind or type or structure of the

“bearing” is claimed) (see at least Figure 5 and paragraph 0029, for example), which bearings “have” an axis of rotation A located therewithin, for example.

Pasquetto’s device includes first and second “support surfaces” (examples of which are shown in the labeled reproduction of an enlarged portion of Figure 5 below) that “extend from” (as broadly claimed, at the very least, they ultimately “extend from” the bearings 16 by virtue of their connection to member 3 which is in direct contact with bearings 16, and they ultimately “extend from” the bearings 17 by virtue of their connection to member 3 which is connected to members 21a, 21b, etc., and ultimately to “bearings” 17, see Figure 5; it is noted that this is but one interpretation of many possible interpretations of the reference based on the broad limitation “extend from”) first 16 and/or 17 and second 16 and/or 17 bearings on each of the columns 18.

Note that the first and second support surfaces both extend in the direction of axis A, are “asymmetrically arranged” with respect to axis A, and that the “second support surface” (of the other support column 18 not shown in Figure 5, see Figure 4, for example; like the “second support surface labeled below) “extends from” the not-shown bearings 16/17 of the (other) column 18 (that isn’t shown in Figure 5) (see Figure 5 and Figure 4) horizontally towards the labeled “first support surface” (of the end shown below).



Additionally, "receiving plate" 4 is considered to be "removably attachable" to the first and second support surfaces (re the second support surface, note that when the receiving plate 4

is in the location shown in Figure 5, it is ultimately attached to both of the labeled support surfaces) in that it is inherently "able" (as broadly claimed) to be removed, at the very least by using tools to remove it.

Re claim 14, note that both the first and second support surfaces are shown as horizontal surfaces, and thus extend parallel to axis A.

Re claims 15 and 17, note that cylindrical pin 30 serves to "position" the plate 4 on the labeled first support surface, as broadly claimed. See Figure 5 and at least paragraph 0039.

Re claims 18 and 20, note the provision of "direct drive" torque motors 21, each "integrated" with a respective one of the bearings (see Figure 5 and paragraphs 0029-0033, for example). Further re claim 20, note that if the control of the motors was not "synchronized", the table 3 would be torn apart when one motor 21 was actuated out of synchronization with the other, i.e., via the application of torque in the wrong direction (one motor actuated in one direction and one in the other) or via the application of torque at one motor and not the other, or via the application of significantly different torque at one motor than at the other. In other words, to achieve the amount of rotation desired to achieve precision machining, it is considered inherent that the two motors are "synchronized" (see also paragraphs 0031-0033, for example).

Re claim 19, note that the aforescribed "receiving plate" 4 is coupled to "beam" 3, and that it is considered to be "removably" coupled in that it is inherently "able" to be removed, at the very least by using tools to remove it.

Re claim 21, note that workpieces are supported on the work table 3 via at least platforms 4, and that movement with respect to the various axes, including movement of the table 3 about

axis A is controlled during a machining operation by the machining devices 5 to produce a desired workpiece (see at least paragraphs 0048, 0003, and 0002, for example).

Re claim 22, the surface labeled in the above reproduction of Figure 5 as "Alternative bearing re claim 22" can alternatively be considered the claimed "bearing" (there being a "first" such bearing adjacent one side (adjacent one element 18) and a second such bearing adjacent the other side (adjacent the other element 18). Note that the indicated "bearing" is at least ultimately supported by the portions 18 of the frame, includes the axis of rotation A therein, and "bears" the cylindrical pin 15 therein. Additionally, the support surfaces described previously at least ultimately "extend from" such "bearings" as claimed (see Figures 5, 4). Furthermore re claim 22, note that Paschetto teaches a "hydraulic vessel" having a piston or "rod" 24 extending therefrom and being at least ultimately coupled to the "bearing" labeled above at a location such that the shown "bearing" is between the rod 24 coupling location and the "receiving plate" 4 (see Figure 5, for example).

9. Claims 13-17, and 19, any of which were rejected under 35 USC 112 above are as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,955,345 to Kato.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Kato teaches a machining device (see Figure 1) including a "frame" 18 (Figure 1) including first and second bearings 31 (Figure 4, at least col. 9, line 65 through col. 10, line 5, for example) "having" an axis Y-Y of rotation (Figure 4).

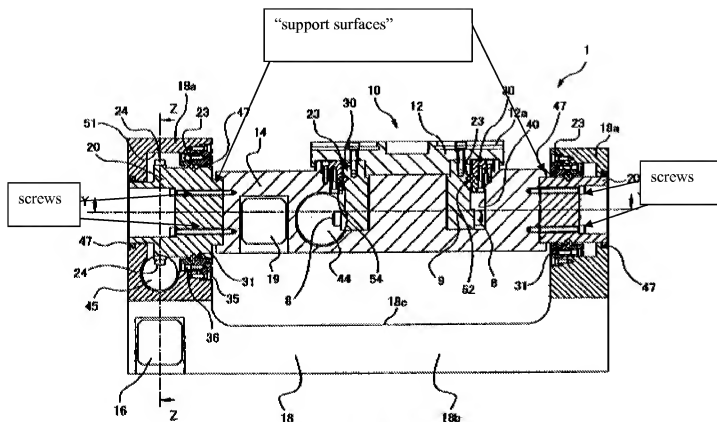


FIG. 4

Additionally, Kato teaches the horizontal "support surfaces" labeled above in the reproduction of Figure 4, which support surfaces "extend from" bearings 31 in a direction of the axis Y-Y of rotation (see Figure 4), and which surfaces are "asymmetrically arranged" with respect to the axis Y-Y of rotation.

Also, Kato teaches a "receiving plate" 14 for at least ultimately receiving a workpiece W thereon (Figures 1, 4), which "receiving plate" 14 is considered to be "removably attachable" to

the shown "support surfaces" in that it is inherently "able" to be removed, whether or not force by an external device is required for such removal.

Further note that the "receiving plate" 14 extends "between" the support surfaces and the axis Y-Y of rotation (Figure 4).

Re claim 14, see the reproduction of Figure 4 above, noting that the labeled support surfaces are horizontal, as is axis Y-Y.

Additionally, re claims 15-17, the receiving plate 14 is attached to the shown support surfaces via "elongated" screws, shown in Figure 4 and labeled above, and specifically regarding claim 17, note that screws are "pins".

Re claim 19, as broadly set forth in the claim, note that at least the elements 20 can each be considered to constitute a "beam" that extends (at least by virtue of the "support surfaces" labeled above) in an area that is "between" the first and second bearings 31, and that the "receiving plate" 14 is "removably" coupled to the "beam" 20 as described previously.

Claim Rejections - 35 USC § 103

10. Claims 18, 20, and 21, as best understood, is rejected under 35 U.S.C. 103(a) as obvious over U.S. Pat. No. 6,955,345 to Kato.

Kato teaches all aspects of the presently-claimed invention as set forth above. Additionally, re claim 21, see col. 8, lines 10-12 and col. 14, lines 1-9, and also note that by actuating the respective drive motor to rotate the workpiece either about the axis of rotation of table 12 or about axis of rotation Y-Y and relatively moving the workpiece and the tool to be in contact (noting the lack of antecedent basis of the motor in claim 21) while at the same time actuating the machining device shown in Figure 1, the device is configured to be capable of

performing in the functional limitations of the drive motor that "actuates the workpiece to be machined during the machining operation while a tool and the workpiece are in contact" (noting that present claim 21 is an apparatus claim.

However, re claim 18, Kato does not teach a "direct drive motor integrated with the first bearings", re claim 20, Kato does not teach " for each bearing, a direct drive motor, the control of which is synchronized", and re claim 21, Kato does not teach that either of the drive motors 16, 19 are "direct drive motors".

Examiner takes Official Notice that the use of direct drive motors (as opposed to drive motors that provide an indirect driving force via a gear or other mechanism) (and specifically regarding claim 18, direct drive motors located at, i.e., "integrated with" a bearing supporting the driven member) is well-known and widely used in the art for the purpose of achieving the same rotary driving in a smaller space (by eliminating the intervening structure such as gearing or drive belts between the motor and the driven member) and/or for the purpose of eliminating problems associated with the intervening structure (i.e., cams, gearing, belting, etc.), such as wear of the cams over time, backlash (re gearing) or belt "stretch" as the belt wears during operation (re belting), for example, for example.

Additionally, re claim 20, Examiner takes Official Notice that it is well-known in the art to use a second synchronized direct drive motor on the opposite end of a rotary member, i.e., such as one at one of the bearings 31 and another at the other bearing 31 of Figure 4 of Kato, for the purpose of providing additional torque to move a heavy load, for example.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a direct drive motor, and specifically regarding claim

18, a direct drive motor located at, i.e., “integrated with” a bearing supporting the driven member for the purpose of achieving the same rotary driving in a smaller space (by eliminating the intervening structure such as gearing or drive belts between the motor and the driven member) and/or for the purpose of eliminating problems associated with the intervening structure (i.e., cams, gearing, belting, etc.), such as wear of the cams over time, such as backlash (re gearing), or belt “stretch” as the belt wears during operation (re belting), for example, for example.

Additionally, re claim 20, therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have uses a second synchronized direct drive motor on the opposite end of the rotary member, i.e., such as one at one of the bearings 31 and another at the other bearing 31 of Figure 4 of Kato, for the purpose of providing additional torque to move a heavy load, for example, thereby enabling Kato's device to process heavier workpieces, for example.

11. Claim 22 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,955,345 to Kato as applied to claim 13 above, and further in view of U.S. Patent Application Publication No. 2004/0132595 to Grob.

With respect to the Kato reference, Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Kato teaches all aspects of the presently-claimed invention as set forth above, but does not teach the “hydraulic vessel” and “rod” of claim 22.

However, Grob teaches a machining device including a carrier 46 for a workpiece wherein the carrier is mounted for rotation about an axis A between two members 4 each

including a “bearing” that “has” the axis of rotation A (see Figure 13, for example). Carrier 46 is analogous to the “receiving plate” in that it is configured so as to be offset from or asymmetrical with respect to axis A, rotates about axis A, and is supported by rotational bearings at both ends along axis A (Figure 13).

Grob further teaches the use of a compensating device 8 including a “vessel” in the form of cylinder 81 and a “rod” 82 extending therefrom, the “rod” 82 being coupled to one of the “bearings” in element 4 at a location such that the bearing in element 4 is located between the coupling location of rod 82 and the member 46.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the machining arrangement taught by Kato with a piston/cylinder arranged such that the rod is “coupled to” one of the bearings at a location such that the bearing is between the coupling location of the rod and the receiving plate as taught by Grob for the purpose of reducing the turning moment so that the drive for the table doesn’t have to work against the weight of the table (see paragraphs 0049-0050, also paragraph 0141 of Grob).

Additionally, while Grob doesn’t explicitly set forth that the piston/cylinder 82/81 is a hydraulic piston/cylinder, Examiner takes Official Notice that the use of hydraulic piston/cylinders for compensation devices is well-known and widely used, and that thus, it would have been obvious to have made the piston/cylinder taught by Grob a well-known “hydraulic” piston/cylinder for the purpose of providing a piston/cylinder that is well-known, widely used, and thus readily available “off-the-shelf”.

Response to Arguments

12. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. Specifically regarding the Pasquetto reference, attention is directed to the new rejection based thereon above based on a different interpretation of the reference, which new interpretation was necessitated by the changes to the claims.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E. Cadugan whose telephone number is (571) 272-4474. The examiner can normally be reached on Monday-Thursday, 5:30 a.m. to 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Erica E Cadugan/
Primary Examiner
Art Unit 3726

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October 23, 2008